

Syllabus

CS4112: Distributed Operating Systems

Winter Quarter 2003

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COURSE DESCRIPTION

The purpose of this course is to introduce the student to the theory, design, and application of distributed systems. The major topical areas covered in this course are as follows: distributed system architecture, interprocess communication, distributed objects and remote invocation, distributed file systems, name services, time and global state, coordination and agreement, transaction and concurrency control, replication, and distributed shared memory.

PREREQUISITES

Students enrolled in this course are expected to have a working knowledge of operating systems and networks. The completion of CS3450 (or an equivalent course) prior to enrolling in CS4112 is a firm prerequisite.

LECTURES AND OFFICE HOURS

The class will meet three hours per week in Spanagel Hall, Room 332. The instructor reserves the right to hold class on an as-needed basis during the fourth hour each week set aside for laboratory assignments.

TEXTBOOK AND READING MATERIALS

The required textbook for this class is *Distributed Systems: Concepts and Design*, Addison-Wesley, Third edition, 2001, by Andrew S. Tanenbaum and Maarten van Steen. The textbook is available for purchase from the campus bookstore. The instructor chose this book after both reviewing its contents and investigating what material is taught in similar courses offered at other universities.¹ In addition to the textbook, the instructor will distribute, via electronic mail, articles that describe recent research and development work on distributed operating systems and distributed computing. Two supplementary books you may want to refer to are by Coulouris *et al.*² and Garg³.

¹ The other universities included the following: George Mason University, MIT, Stanford University, University of California (Santa Barbara and San Diego campuses), University of Maryland, University of North Carolina, University of Texas at Austin, and the University of Virginia.

² Coulouris, G., Dollimore, J., and Kindberg, T. *Distributed Systems: Concepts and Design*, Essex, England: Pearson Education Ltd. (Addison-Wesley), 2001. The students in the previous two offerings of this course did not like the writing style of the authors, although the technical content is excellent.

³ Garg, V. K. *Elements of Distributed Computing*, New York: Wiley-Interscience, 2002. This book became available after I had already placed the book order for the winter quarter 2003. This book gives a formal treatment of distributed computing. I may use this book in the future.

HOMEWORK ASSIGNMENTS

Homework assignments will not be graded. Solutions for each homework assignment will be discussed in class or via electronic mail. The homework assignments are intended to be used to help you determine your mastery of the course material, in preparation for the examinations.

READINGS

Each student is responsible for both reading all of the articles in the reading list (see attachment) and being able to discuss the articles during class. The instructor will gauge each student's comprehension of the material during the class-discussion period. The students are encouraged to use their skills in critical thinking and to be creative in their analyses of the concepts, methodologies, and results that are presented in the articles.

GRADING

Due to the fact that only seven students are enrolled in this class, the course will be taught this quarter using a lecture-seminar format. Students are expected to both complete all assignments and participate in class discussions. A student who does not participate in class discussions will receive a letter grade of 'A-' or below. In addition to the homework assignments, you will also be given a mid-term and exam.

CLASS ABSENCES

If possible, please notify the instructor if you will not be able to attend a class session, so that I can work out a date and time to go over with you the material you missed.

SCHEDULE

Table 1 contains the tentative schedule of lectures, examinations, presentations, and reading assignments. The instructor reserves the right to modify the schedule.

Table 1. Tentative schedule

<i>Week</i>	<i>Material from Textbook</i>	<i>Reading Assignments</i>
1	Chapter 1	
2	Chapter 2	
3	Chapter 3	1
4	Chapter 4	2
5	Chapter 5	3
6	Chapter 6	4
7	Chapter 7	5
8	Chapter 9	6
9	Chapter 10	7
10	Chapter 12	
11	Review and Final Exam	